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Ans

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/660,095	09/12/2000	Achilles George Kogiantis	3-3-12	7320
30593	7590	04/28/2004	EXAMINER	
HARNES, DICKEY & PIERCE, P.L.C.			AFSHAR, KAMRAN	
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RESTON, VA 20195			PAPER NUMBER	
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17

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/660,095

Applicant(s)

KOGIANTIS ET AL.

Examiner

K. A.

Kamran Afshar, 703-305-7373

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-2 and 4-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4-8, 10-18, 21-28 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkvall (U.S. Patent 6,542,736 B1) in view of Yun (U.S. Patent 6,600,934 B1).

With respect to claims 1, 15, 16, 18, 26, 28 & 30, Parkvall discloses a method for reconfiguring / (e.g. radio link adaptation, selecting antenna(s)) a communication system (See Title, Abstract), receiving, from a mobile station, mobile station capability information (e.g. channel condition, data rate, channel quality, signal quality, transmission power level, interference, shadowing, multi-path fading, See i.e. Co. 2, Lines 10-36, Co. 5, Lines 13-27, Fig. 2) / mobility of the mobile station (e.g. as the mobile terminal moves or radio channel conditions / quality change, See Co. 8, Line 65 – Co. 9, Line 21) including a plurality of the mobile station's capabilities (e.g. bit error rate, signal-to-noise interference ratio, See Co. 2, Lines 47-62, Co. 6, Lines 54-67); and selecting one of a plurality of transmit configurations (e.g. selecting transmission power level/ data rate, best base station, sector antenna or antennas, and modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66) using at least one of the plurality of mobile station capability (e.g. maximum data rate, channel quality, signal quality, transmission power level, interference) information received / sent (See Co. 8, Line 65 – Co. 9, Line 9, Co. 10, Lines 48, Figs 6-8, 11-12 & Entire). However, Parkvall did not explicitly teach the plurality of transmit configurations including at least two of a single transmit antenna configuration, a space time spreading configuration, a selective transmit diversity configuration, and a multi-input

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configuration. In the same field of endeavor, Yun teaches the plurality of transmit configurations at least two of a single transmit antenna configuration (see e.g. 151, 153 of Fig. 1, 351, 353 of Fig. 3), a space time spreading configuration, a selective transmit diversity configuration (i.e. STD) and a multi-input (See e.g. 141 of Fig. 1, 333 of fig. 3) configuration (See e.g. Co. 1, Lines Co. 1, Lines 22-44, Co. 2, Lines 17-25, Co. 4, Lines 46-61 & Entire Document). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide above teaching of Yun to Parkvall to facilitate an STD (Selection Transmit Diversity) communication method, a base station selects a transmission antenna corresponding to an antenna selection signal received from a terminal, transmits a traffic channel signal through the selected antenna, and transmits a predetermined part of the traffic channel signal through an unselected antenna as suggested by Yun (See Abstract).

Regarding claim 2, Parkvall discloses receiving information on mobility of the mobile station (e.g. as the mobile terminal moves, See Co. 8, Line 65 – Co. 9, Line 9); and selecting step selects one of the plurality of transmit configurations using at least one of the plurality of mobile station capabilities (e.g. channel condition, data rate, channel quality, signal quality, transmission power level, interference, shadowing, multi-path fading, See i.e. Co. 2, Lines 10-36, Co. 5, Lines 13-27, Fig. 2) channel quality information, the mobile station capability information and the information on the mobility of the mobile station (See Co. 8, Line 65 – Co. 9, Line 21, Co. 10, Lines 48, Figs 6-8, 11-12 & Entire).

Regarding claim 4, Parkvall discloses the channel quality information includes information on a carrier to noise ratio of a communication channel (See i.e. Co. 6, Lines 54-67 & Fig. 2, Co. 11, Lines 11-42).

Regarding claim 5, Parkvall discloses the channel quality information includes information on a signal to noise ratio of a communication channel (See i.e. Co. 6, Lines 54-67 & Fig. 2, Co. 11, Lines 12-42).

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Regarding claim 6, Parkvall discloses the channel quality information includes information on an error rate (See i.e. Co. 6, Lines 54-67 & Fig. 2, Co. 11, Lines 12-42).

Regarding claim 7, Parkvall discloses the step of selecting comprises selecting a single antenna transmit configuration (See Co. 5, Lines 13-27, Co. 10, Lines 34-48, Fig. 8, Co. 11, Lines 12-42, Figs 11-12).

Regarding claim 8, Parkvall discloses the step of selecting comprises selecting a selection transmit diversity transmit configuration (See Co. 5, Lines 13-27, Co. 10, Lines 34-48, Fig. 8, Co. 11, Lines 12-42).

Regarding claim 10, Parkvall discloses the step of selecting comprises selecting a multi-output and multi-input transmit configuration (See Co. 5, Lines 13-27, Co. 10, Lines 34-48, Fig. 8, Co. 11, Lines 12-42).

Regarding claim 11, Parkvall discloses selecting a configuration that selects one of a plurality of transmit antennas (See Co. 5, Lines 13-27, Co. 10, Lines 34-48, Fig. 8, Co. 11, Lines 12-42).

Regarding claim 12, Parkvall discloses selecting a configuration that transmits using a plurality of transmit antennas (See Co. 5, Lines 13-27, Co. 10, Lines 34-48, Fig. 8, Co. 11, Lines 12-42).

Regarding claim 13, Parkvall discloses each antenna uses a different orthogonal code (See Co. 11, Lines 1-11).

Regarding claim 14, Parkvall discloses where each antenna uses a different Walsh code (See Co. 11, Lines 1-11).

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Regarding claim 17, Parkvall discloses sending, from the mobile station, mobility information of the mobile station (e.g. as the mobile terminal moves, See Co. 8, Line 65 – Co. 9, Line 21) and wherein, the receiving, by the mobile station, includes receiving the selected transmit configuration (e.g. selecting transmission power level/ data rate, best base station, sector and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66) that is based on the channel quality information sent, the mobility information sent, and at least one of the mobile station capabilities sent (e.g. data rate, channel quality, signal quality, transmission power level, interference, See Co. 8, Line 65 – Co. 9, Line 9, Co. 10, Lines 48, Figs 6-8, 11-12, Co. 11, Lines 12-67).

Regarding claims 21, 23 Parkvall discloses receiving channel quality information and wherein, the selecting step includes selecting one of the plurality of transmit configurations (e.g. selecting transmission power level/ data rate, best base station, sector and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66) using the channel quality information received and at least one of the plurality of mobile station capabilities received (See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, Co. 8, Line 65 – Co. 9, Line 9, Co. 10, Lines 48, Figs 6-8, 11-12).

Regarding claims 22, Parkvall discloses the plurality of mobile station capabilities includes a plurality of transmit configurations supported by the mobile station (See Co. 11, Lines 58 - Co. 12, Line 4).

Regarding claims 24, Parkvall discloses sending, from the mobile station, channel quality information and wherein, the receiving, by the mobile station, includes receiving a selected transmit configuration (e.g. selecting transmission power level/ data rate, best base station, sector

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and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66) that is based on the channel quality information sent and at least one of the plurality of mobile station capabilities sent (See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, Co. 8, Line 65 – Co. 9, Line 9, Co. 10, Lines 48, Figs 6-8, 11-12).

Regarding claims 25, Parkvall discloses sending, from the mobile station, channel quality information and wherein, the receiving, by the mobile station, (See bi-directional communication links of fig. 7) includes receiving the selected transmit configuration (e.g. selecting transmission power level/ data rate, best base station, sector and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66) based on the mobility information sent and the channel quality information sent (e.g. channel condition, data rate, channel quality, signal quality, transmission power level, interference, shadowing, multi-path fading, See i.e. Co. 2, Lines 10-36, Co. 5, Lines 13-27, Fig. 2).

Regarding claims 27, Parkvall discloses transmitting using the selected one of the plurality of transmit configurations (e.g. selecting transmission power level/ data rate, best base station, sector and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66).

Regarding claims 29, Parkvall discloses by the mobile station, transmission using the selected transmit configuration (e.g. selecting transmission power level/ data rate, best base station, sector and antenna or antennas, modulation type, See Figs 6-7, Co. 9, Line 10-20, Co. 10, Lines 20-32, flow chart of Figs. 11-12, Co. 11, Lines 12-66).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkvall (U.S. Patent 6,542,736 B1) in view of Yun (U.S. Patent 6,600,934 B1) further in view of Allpress et al (U. S. Patent 6,392,988 B1).

Regarding claim 9, Parkvall in view of Yun disclosed everything as applied above in claim 1. However, Parkvall in view of Yun failed teaching space-time spreading transmit configuration. In the same field of endeavor, Allpress teaches space time spreading transmit configuration (See Co. 1 Line 61 – Co. 2, Line 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide above teaching of Allpress to Parkvall in view of Yun to facilitate space time spreading transmit configuration as suggested by Allpress (See Co. 1 Line 61 – Co. 2, Line 25).

6. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkvall (U.S. Patent 6,542,736 B1) in view of Yun (U.S. Patent 6,600,934 B1) further in view of Lee (U.S. Patent 6,456,604 B1).

Regarding claims 19-20, Parkvall in view of discloses everything as applied above in claim 1. However, Parkvall in view of Yun did not explicitly teach communicating the selected transmit configuration (e.g. data rate / channel quality, See i.e. Co. 5, Lines 13-27, Fig. 2) to the mobile device over a control channel, wherein the control channel is at least one of a paging channel and synchronization channel. In the same field of endeavor, Lee teaches controlling / increasing data transmission to mobile terminal and detecting the maximum velocity / mobility (See Co. 7, Lines 29-39, Co. 10, Line 60 – Co. 11, Line 5) of the mobile terminal / device over a control channel; wherein, the control channel is explicitly at least one of a paging channel and

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synchronization channel (See Co.3, Table 1, Co. 4, Lines 29-38). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide above teaching of Lee to Parkvall to transmit configuration (e.g. data rate / channel quality) to the mobile device over a control channel.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


a) Milam; Timothy S. (U.S. Patent 5,794,145), Discloses Mobile Device Multi-band Antenna System.

b) Hageltorn; Goran (U.S. Patent 600117), Discloses Radio telephone with separate antenna for stand-by mode.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (703) 305-7373. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, Gary, Erika A. can be reached @ (703) 308-0123. The fax number for the organization where this application or proceeding is assigned is (703) 872-9314 for all communications.


Kamran Afshar


ERIKA GARY
PATENT EXAMINER